

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Claims 1-4 have been amended. Support for these amendments is provided at least in paragraphs 23-28 of the specification.

Claims 1-4 were rejected, under 35 USC 103(a), as being unpatentable over Kim et al. (US 7,171,240) in view of Medvedev et al. (US 2003/0161282). To the extent these rejections may be deemed applicable to the amended claims, the Applicants respectfully traverse based on the points set forth below.

Claim 1 defines a transmitting apparatus that determines a number of multiplex sequences, based on a number of effective eigenvalues, and performs serial-to-parallel conversion of one sequence of transmission data into the particular number of sequences identified by the determined number of multiplex sequences. The claimed subject matter provides an advantage of improved communication quality by eliminating MIMO channels having poor propagation characteristics (see specification page 2, lines 4-23).

The Office Action proposes that Medvedev discloses determining a number of multiplex sequences based on a number of effective eigenvalues (see Office Action page 3, lines 1-3 of third paragraph).

However, the Applicants note that Medvedev does not disclose determining or identifying a number of effective eigenvalues. Thus, it necessarily follows that Medvedev cannot disclose determining a number of multiplex sequences based on a number of effective eigenvalues, contrary to the position taken by the Office Action.

Medvedev discloses multiplying each of N_T elements of a beam forming vector by a modulation symbol so as to generate N_T scaled symbols that effectively produce a directional beam when transmitted in parallel by an array antenna (see Medvedev paragraph [0125], lines 1-4, and paragraph [0132], lines 14-20). Medvedev does not disclose that the number of N_T elements varies or that some of these elements are effective or ineffective. Thus, Medvedev's number of multiplex sequences is a fixed constant value, and a fixed constant value cannot be used to determine a varying number of multiplexing sequences, as can the varying number of effective eigenvalues recited in claim 1.

In brief, Medvedev's system produces a fixed number of symbol streams (e.g., multiplex sequences) whereas the Applicants' claimed subject matter produces a varying number of multiplex sequences in accordance with a calculated number of effective eigenvalues. The Office Action acknowledges that Kim does not supplement the teachings of Medvedev in this regard (see Office Action page 3, second paragraph).

Accordingly, the Applicants respectfully submit that Kim and Medvedev, considered individually or in combination, do not render obvious the subject matter now defined by claim 1.

Independent claim 4 similarly recites the above-mentioned subject matter distinguishing apparatus claim 1 from the applied references, but with respect to a method. Therefore, allowance of claims 1 and 4 and all claims dependent therefrom is deemed to be warranted.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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